Social interaction in virtual communities: the significance of technology

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Abstract: In this paper, it is argued that supporting technology influences the way interaction occurs in a virtual community. The empirical part of the study comprises interviews with visitors at LunarStorm, the most popular online community among young people in Sweden. The study highlights a specific feature within the software environment of LunarStorm and the empirical data show that this feature strongly influences community life. Based on these findings it is argued that there is a need for further studies that aim for increasing the knowledge about the role of the technology when designing for social interaction and community development.

Keywords: virtual communities; community development; community design; social interaction; technology.


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1 Introduction

Since its creation in the early 90s, the WWW has developed into a multi-faceted arena for social interaction. All over the internet, social spaces are emerging and being occupied by people who find their stay there meaningful and worthwhile. Some of these social spaces have developed beyond merely a notion of a shared space and become venues for thriving communities. The phenomenon of web-based/virtual communities has generated an extensive body of research in recent years (Jones, 1995, 1997, 1998; Smith and Kollock, 1999), and the phenomenon as such has been examined from different perspectives, with core issues concerning how identities are being established online (Donath, 1999), how relationships develop (Lyon, 1997; Wellman and Gulia, 1995) and whether a virtual community actually is a ‘real’ community (Baym, 1995). However, Stolterman (1999) argues that typically the approach taken in studies of virtual communities is sociological, psychological or cultural, and even
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if this statement goes back a couple of years it still seems to be a valid claim. While acknowledging in these approaches the potential of creating a thorough understanding of the phenomena at hand, Stolterman makes the case that there is also a need to recognise the supporting technologies that are the prerequisites for any web-based community to exist. Furthermore, we need to give attention to the relation between the technology and the social reality within which it is used (Stolterman, 1999).

This study contributes to this endeavour by focusing on the role of the software environment (i.e., technology) when promoting social interaction in an online community. Section 2 describes briefly the role of technology in virtual communities. Section 3 presents an empirical study of a Swedish online community and in Section 4 the empirical data are reviewed highlighting a specific feature in the software environment supporting the community. Section 5 further discusses the empirical findings and finally, Section 6 provides the summary and conclusions of the study.

2 Technology matters

The problem of defining online communities has been a central issue within this area of research since its origin. Rheingold, in different respects a pioneer in the field, concluded:

"Virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace."

(Rheingold, 1993)

Besides Baym (1995, 1998) and Wellman and Gulia (1995) referred to in the previous section, Fernback (1997, 1999) and Watson (1997) among others also have made significant contributions to this discussion. Being anchored in the pioneering work and definitions made by Rheingold, they have critically examined the notions and meanings of community, computer-mediated communication and online relationships in a quest for a solid and understandable definition of virtual communities. A mutual theme in these efforts is unsurprisingly the adopted sociological and cultural perspective. Even if technology is considered to be an important part of the phenomena as such, it is not regarded as a salient component in the effort of trying to understand the basic definitions of web-based communities and online social interactions.

Taking on a different angle, Preece (2000) tries to formulate a working definition of online communities that could serve as a guide for developers having an operational responsibility. In this connection, an online community consists of four components, according to Preece (2000):

- people – that communicate and interact socially with each other
- shared purpose – the reason for the community to exist
- politics – to guide behaviour
- computer systems – that support and mediate social interaction.
It seems reasonable to assume that practising developers not so easily overlook the computer system component, since it is their premier tool to be used in the launching of a community. Thus, the purpose of this definition is perhaps not to emphasise the importance of technology to practicing developers. Rather, the intention with the four components can be understood as a way to communicate to developers the importance of the other three and how they all influence each other and together as a whole constitute a community. From a researcher’s perspective though, this definition has the advantage of recognising the sometimes-overlooked computer system (i.e., technology) as an essential part in the analysis of virtual community life.

A computer system typically consists of both hardware and software, but in this connection the software components are the most crucial. Even if hardware issues are relevant, the software environment is clearly the most important when creating specific web-based community sites. There are many different online communities, supported by a variety of software environments. Listservers, chats, bulletin boards, blogs, instant messaging, etc. generate different settings and support diverse modes of communication and interaction. In addition, the same basic software is obviously designed and arranged differently in various communities, in line with the different purposes of the communities.

The present study will introduce LunarStorm (www.lunarstorm.se), a web-based community supported by a multifaceted software environment including chat, instant messaging, asynchronous forums, personal web pages etc. Presumably trying to design for sociability, the developers of LunarStorm have arranged the software in a specific way, implementing features that are expected to promote community development. The empirical study will show that the design decisions made by developers do have a bearing on the way interaction occurs among members of the community, and underlines the claim that technology does matter in web-based communities.

3 Introducing LunarStorm

This section will introduce the Swedish online community LunarStorm, describing the supporting software environment. LunarStorm is the most popular community site online among young people in Sweden, having about 1.2 million active members with an average age of 18 (Lunarworks, 2005). The welcome page at LunarStorm (Figure 1) contains information about what kind of a community LunarStorm is, but only members are allowed to enter.

Membership is free and once you have become a member you get your own personal space within LunarStorm. This personal space is called My nook (Figure 2) and serves as a personal web page inside of LunarStorm. Attached to the nook are several functions that its owner can use to present herself/himself and to communicate with other members. At the front page of your nook, you are expected to present yourself with a personal photo, text, links, etc., much like you would do on an ordinary homepage. When you register as a member, you also answer a set of questions concerning your interests and personality and the answers are presented on the front page of the nook.

Next to your chosen nickname, your gender and age are shown (although you have to state your social security number when registering, it is possible to fake these facts). Also, your status is displayed. The status is simply your engagement in the community expressed in figures. As a new member, you have zero status but when you make your
presentation and answer the standard set of questions about yourself you receive your first status points. Moreover, if the photo of yourself is a real photo instead of a drawing you receive extra points.

Hereafter, a member will receive status points for every act of interaction or communication. Thus, you will increase your status by sending e-mails, joining a discussion group, visiting other members’ nooks, writing in their guest books, collecting pictures and links and presenting them to visitors, writing in your diary etc. You also receive status points only by logging in, and extra points are earned on the basis of how many months you have been a member. This means that members that visit LunarStorm frequently, participating in the ongoing activities and presenting themselves with facts and photos, will receive higher status than members that are not active to the same extent.

Figure 1  The welcome page at LunarStorm
The feature most frequently used in members’ nooks is the *Guest book*. In the guest book, visitors can leave messages to the owner of the nook. These messages are visible to anyone who visits the guest book. Also, the features called *Friends*, *Gadgets* and *Diary* are commonly used. The feature *Friends* is a list of friends among the members of LunarStorm. For every friend on the list, it is possible to indicate what kind of relationship you have with him or her. Every name is also a link to the nook of that person and you can see in the list which of your friends is online at the moment. The feature called Gadgets is a repository for pictures, audio files, links, etc. that a member wants to share with others. Typically you will find some photos of the owner of the nook and of hers or his friends and family.

The Diary works like an ordinary diary in which you simply write things down. Unlike a normal diary though, this one is not by necessity secret. You can choose to keep the contents of your diary visible only to a selection of friends, but usually there are no such restrictions imposed. When you write in your diary, you also receive status points, which means that some people write short pointless messages everyday only to receive higher status. Others write longer messages about things they have done during the day or about something they just want to share with the community.

Besides the Guest book, Friends, Gadgets and the Diary, there are some more additional features that can be used in the nook. *Roots* lets you join up with former classmates from school that also are members at LunarStorm, and *Clubs* allows you to
create or join interest groups with forums of their own. *Twenty questions* is another standard set of questions about yourself that you can answer if you want to give visitors extra information. *Lists* is a feature that you can use to display 'top lists' on different topics. Finally, *Rajraj* lets you show pictures from parties and then give comments on them.

These are the main features of a nook, available to every member of LunarStorm. However, interaction not only takes place inside the nooks, outside of these member spaces several other features support interaction. One can participate in synchronous chats or asynchronous forums on various topics. Within the community, there is also the possibility to send e-mails (*LunarMail*) and to communicate with other members via instant messaging (*LunarPejl*). It is also possible to use a search engine to find people that live close to you or that share similar interests. Other features include web radio, web games and different kinds of competitions.

### 4 The status system within LunarStorm

During 2003, a qualitative study was conducted, including semi-standardised interviews (Berg, 2001) with members of LunarStorm and accompanying analysis of nooks belonging to the subjects being interviewed. The purpose of the study was to examine how people experienced being members of the LunarStorm community and to investigate how and to what extent different features in the software environment were used.

Fourteen community members, eight men and six women, participated in the study and the interviews were conducted in an offline face-to-face setting at the university (Umeå University). The interviews were recorded so that they could be transcribed and analysed afterwards.

The subjects interviewed were 17–24 years old and local residents, living in the city of Umeå. When using the search engine in LunarStorm trying to find other members living in a specific geographical area, a top-50 list is received, displaying the nicknames of those in the selected area with the highest status points. Accordingly, the search for subjects for the study started out with searching for people living in the city of Umeå, getting a list of those with the highest status. It was not a criterion to find members with high status per se, but it seemed to be important that the participants were familiar with all the features of LunarStorm and since high status indicates that a member has been visiting LunarStorm frequently for a long time it was considered a good thing to include such members. Thus, members on the top-50 status list were invited via e-mail to participate in the study and those who accepted the invitation later visited the university for an offline interview.

During the interviews, the subjects described how they used different features in LunarStorm. Since the software environment offers a variety of means for communicating with others, the subjects were asked to give an account of how they normally interacted with their community friends, which features in the environment they preferred and why. For the purpose of both complementing and following up on the information gathered during interviews, the nooks of the subjects being interviewed were also visited and analysed.

Discussing different features within LunarStorm and describing how they usually chose to behave and communicate online, all subjects interviewed repeatedly returned to the status system and its implications. As described in the previous section, members
will receive status for (almost) every act of interaction within the community. Thus, posting e-mails, posting in discussion forums and in guest books, writing in diaries etc. reward you with status points. All subjects interviewed stated that the status feature has an impact upon the way interaction occurs at LunarStorm. As a new member, it is common to try to increase your status rapidly, for example by writing regularly in your diary, writing in other members’ guest books, sending e-mails etc. If you score low on your status, you are considered to be a ‘newbie’ and as a newbie you are not attracting people. Also, you will probably not be visible in any top-50 lists generated via the search facilities.

Many people are looking for higher status. To have high status is to be someone. (S2)

It [the status level] can be seen as a measure of popularity, the higher status you have the more popular you are. Maybe you receive many contributions to your guest book. (S6)

Many of the subjects had been members for several years and indicated that even though the community still was important to them, in the beginning they had perhaps been even more passionate, sometimes feeling almost fixated with being online, communicating with friends and chasing for status points.

It [the status system] creates an addiction. You need to log on every day to do things in order to get status points. (S7)

When browsing through the many nooks of LunarStorm, it is obvious that different people have chosen different strategies when it comes to presenting themselves, using the various features of the nook. Also, in the group of subjects interviewed in this study there was diversity. Some of them had chosen to describe themselves in detail, with lots of photos and information about their appearance, their interests, friends, family, etc. Cell phone number, ICQ number and e-mail address were also typically enclosed. The argument for this strategy was that it is a natural thing to present oneself thoroughly at LunarStorm. It is easier to find friends with similar interests if you can read sincere presentations, and in the end LunarStorm is fun mainly due to the fact that people do to some extent expose themselves.

I have most of it in my presentation, cell phone number, who I am, what I like, facts about myself, weight, length. I try to design my presentation in a personal way. The information in the presentation is important. Photos are very important and the first thing I do [when visiting other nooks] is to look at the Gadgets. (S8)

[If people did not present themselves in detail] then it would not work, the whole idea with LunarStorm. (S1)

Others had chosen to be more moderate with personal information. They stated that they did not want to reveal too much about themselves since they did not know who would read about them.

I write quotations, do not have any information about myself. Some others write a lot more but I do not have any personal information at all, you should not give away too much information on the net. (S3)

I have strict rules. I do not reveal my real name, length, weight, phone number. Nobody has anything to do with that. (S6)
The fact that different members had chosen disparate strategies when it comes to sharing personal information in the online community was perhaps not so remarkable. However, when reviewing the nooks an unexpected inconsistency between statements of caution and reality was revealed. Even though some of the subjects claimed that they were very careful about what kind of information they revealed, it did not seem to be completely accurate considering the way they had set up their nooks. All subjects in the study had several pictures among their Gadgets showing themselves, family, pets etc. and almost everyone had a written presentation that contained enough information to enable someone to contact him or her offline. When confronted with these claims, many of the subjects felt ambivalent, indicating that it was so much easier to write about oneself at LunarStorm than it was to present oneself to strangers offline. Consequently, more personal information was conveyed online than one usually would feel comfortable with sharing in an offline setting.

It happens that you write quite a lot. More than you would do at other places. Here you write more about how you are as a person, what you believe and how you feel. (S5)

It is actually information that you communicate, that you do not want to reveal to everyone. But you do not think about that when you sit in front of your computer screen. (S10)

Even though many of the subjects had chosen not to reveal information that they considered to be very private, there seemed to be a common understanding that they did in fact nevertheless reveal too much about them selves. They knew theoretically that they were acting in a public environment and accordingly decided upon an appropriate strategy when expressing themselves and communicating with other community members. In practice though, the strategy was to some extent dislocated, causing them to forget about the public characteristics of LunarStorm, as a consequence sometimes still communicating information that could be considered personal and sometimes even intimate.

The private becomes very public. But you cannot get away. They [LunarStorm] really wants you to write down who you are. And then there is this thing with the status, it becomes a competition about who has the most points, and then you inevitably put more pictures online and write in your diary. You have to do as they write, or else you will not get your points. (S4)

When designing the software environment, presumably aiming at sociability, the developers of LunarStorm decided to provide members with different means of communicating and possibilities of sharing personal information. In addition, they introduced a status system that rewarded members for interacting with each other. Although a member can decide how, and to which extent he or she will present himself/herself online and participate in the ongoing interactions, the incitements for members to fully participate seem to be strong, causing them to sometimes go beyond predetermined commitments of privacy. Furthermore, when reflecting upon their online behaviour, the subjects in this present study pointed out that the status system had a great impact on their interactions and partly was to blame for their behaviour.

Thus, the empirical data gathered during interviews and when analysing nooks show clearly that the status system in LunarStorm has an impact on the way the subjects interact with others. Furthermore, it seems likely that because of the status reward mechanisms, the status system also indirectly forces members to partly unwillingly
expose themselves by presenting themselves with details. In that sense, the status system influences both how communication occurs and what information is to be communicated.

There are certainly many different reasons for this phenomenon, and with a sociological or a psychological perspective some of these reasons would surface. However, in this case a technologically oriented perspective is applied, aiming at revealing the implications of the status system as a component in the software environment.

5 With or without a status system

This study has revealed the significance of a specific feature in the software environment supporting a virtual community. Studying LunarStorm, it is also apparent that the developers have recognised the power connected to the status feature. One example of this is how the developers take advantage of the status system when implementing new features in the software environment. Recently, a feature called Clubs was launched. Clubs lets you create or join interest groups with, among other things, forums of their own. To initiate or to keep a club alive, one needs to pay a small fee (about 2 USD) but then it is free to join. To stimulate members to form clubs, a club owner is rewarded extra status points for as long as the club exists. Even if the status points perhaps are not always the main reason for a member to initiate a club, it can be of some importance. The way the developers use the status system to promote new features like for example Clubs indicates that they are aware of how the status feature influences behaviour.

Still, when implementing the status feature they could not have known the overall effects that it would cause. Certainly it was an intentional design decision, but as always the consequences of introducing technology are hard to predict. Furthermore, the findings in this study do not support a rigid deterministic view on technology in the sense that the outcome of implementing a specific technological feature (i.e., the status system) would be unambiguous and impossible to influence. Still, it is evident that technology matters and that an alternative design of the software environment supporting LunarStorm would probably cause dramatic changes to the community life.

Due to the success story of LunarStorm, attracting millions of young people in Sweden to engage in a large web-based community, several other similar Swedish online communities have been introduced during the last two years. The purpose of these new communities is comparable with that of LunarStorm, trying to create meeting places for young people on the WWW. However, many of these communities have chosen not to introduce a status system. In fact, in another Swedish online community the developers arranged a survey regarding implementing a status system and the result was that the majority did not want a status feature. Even if it seems to strongly influence behaviour in the most successful Swedish virtual community, it does not seem to be very popular among members, causing other community developers resisting the introduction of a similar feature. One could perhaps argue that it is still a misguided strategy not to implement a status system since it has proven to have some positive effects on community commitment in the case of LunarStorm. However, deciding not to have such a feature can also be seen as acknowledging its potential to influence a community. While designing for sociability, a developer decides how to arrange the software environment in the most suitable way in line with the purpose and intention of the community, in this case excluding a status feature.
6 Conclusions

The main argument implied in this study is that technology matters when trying to understand social interaction in virtual communities. It has been argued that the supporting technology influences ongoing interactions and that technical implementations do have an impact on community life. When designing a software environment to support interaction and community development, at the same time the social interactions are to some extent also being designed.

The empirical case of LunarStorm shows an example of how a specific feature in a multifaceted software environment has a strong impact on communication behaviour and indirectly also has some bearing on the subject matters that are communicated. While it might be considered obvious that technology has some relevance in the context of virtual communities, the purpose of this study has been to highlight the often unpredictable but still powerful consequences of perhaps seemingly minor software features that clearly influence social online interactions. This study would perhaps benefit from being complemented with a sociologically guided study, having the potential of further examining the social behaviour of the members of LunarStorm. However, in the area of virtual community research there is also a need for studies that foremost aim for increasing the knowledge about the significance of the supporting technologies.

Since technology-oriented research within this area still is rather uncommon, there is also a need for developing methods for examining the relation between technology and virtual community life. In this study, a single community has been examined, focusing on a specific software feature. It would be of interest to further examine other features and their relevance for community development. Another possible approach would be to conduct comparative analyses on several similar communities with different software environments, examining if and how different design solutions cause different behaviour to occur.

Besides, a study like this perhaps raises more questions than answers. Is it possible to predict the outcome of a specific software design? What are the connections between the mechanisms of virtual community development and the design of the supporting technologies? What is the relation between usability and sociability in the context of web-based communities? (Preece, 2000).

Jones (1999) claims that the internet is more than just a technology and that the social challenges have become more interesting than the technical. While this is true, the social challenges cannot be managed without also examining the technology at hand. When trying to comprehend the phenomenon of virtual communities, it is therefore necessary to further examine both the social interactions and the technology utilised in the interaction.

References


